




hp ProLiant DL380 generation 3 packaged cluster

hardware installation and configuration poster

Getting Started

  
invent



**WARNING:** To reduce the risk of personal injury or damage to the equipment:

- Observe local occupational health and safety requirements and guidelines for manual material handling.
- Obtain adequate assistance to lift and stabilize the chassis during installation or removal.

23–137 kg  
50–300 lb

**Audience Assumptions**

This poster is for the person who installs, administers, and troubleshoots clusters. HP assumes you are qualified in the servicing of computer equipment and trained in recognizing hazards in products with hazardous energy levels. For detailed instructions, refer to the packaged cluster documentation CD.


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Part Number 252657-003



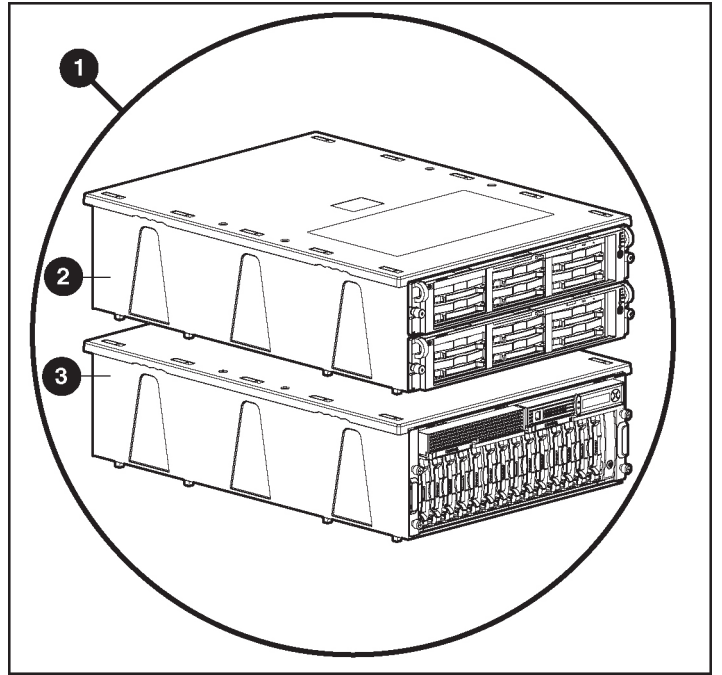
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Poster Overview

- This poster covers the following:
- Component and LED identification
  - Setup in the configuration fixture
  - Setup and installation in a rack

HP ProLiant DL380 Generation 3 Packaged Cluster

The packaged cluster ships in a two-piece configuration fixture. The server fixture holds the two ProLiant DL380 Generation 3 servers. The storage system fixture holds the Smart Array Cluster Storage system.



Item	Description
1	Two-piece configuration fixture
2	Server fixture
3	Storage system fixture

**NOTE:** The server fixture and the storage system fixture are environmentally safe and recyclable. The configuration fixture should be recycled in accordance with your local recycling center guidelines.

Setup Preparations

Required Materials

Before setting up your packaged cluster, locate the following materials included in the shipping box:

- ProLiant DL380 Generation 3 servers
- Smart Array Cluster Storage system
- Power cords and cables
- Rack mounting hardware and rack templates (not used with the configuration fixture)
- HP SmartStart CD
- Hardware documentation and software packs

Locate the following materials **not** included in the packaged cluster shipping box:

- Hard drives
- Server hardware options and documentation (optional)
- Storage system hardware options and documentation (optional)
- Keyboard, monitor, and mouse (need two of each if not using a switchbox)
- Keyboard, video, and mouse (KVM) switchbox (optional)
- Operating system CDs

Required Information Checklist

Gather the following information (dependent on the operating system).

Server node names
Server node IP addresses and subnet masks
Cluster name (Microsoft and NetWare only)
Cluster IP address and subnet mask
IP addresses and subnet mask for the cluster interconnect (Private network used for intracuster communications) (Microsoft and Linux only)
Server node administrator password for each server (used during operating system installation)
New or existing NDA Tree (NetWare only)
Domain name (Microsoft only)
Domain administrator user name and password (used during operating system installation to have the server node join the domain) (Microsoft only)
Domain account name and password for cluster service (this account has special privileges on each cluster server node) (Microsoft only)
Other network settings as needed for your operating system (for example, default gateway address, WINS server address, and DNS settings)

Selecting an Appropriate Site

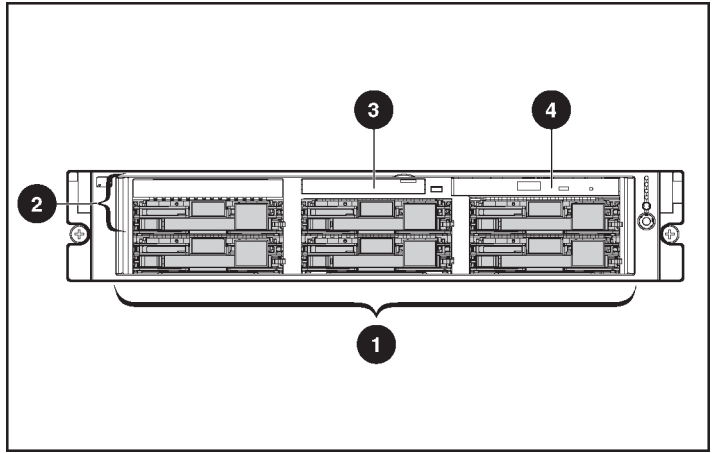
Select an installation site that meets the following requirements.

<ul style="list-style-type: none"><li>Space</li><li>Power</li><li>Grounding</li></ul>	<ul style="list-style-type: none"><li>Temperature</li><li>Rack</li><li>Airflow</li></ul>
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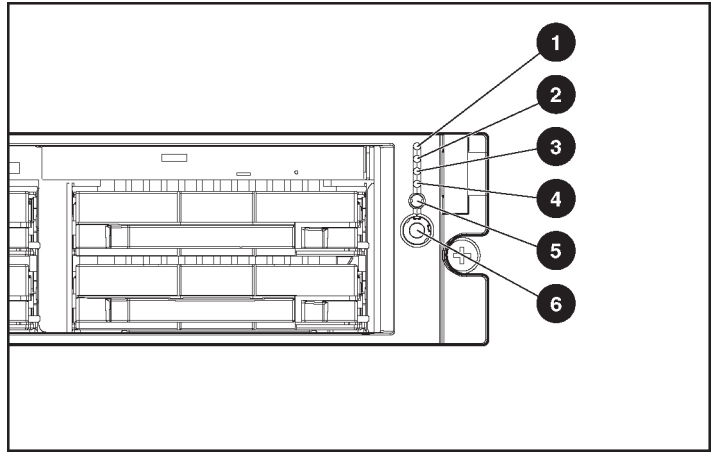
Detailed installation site requirements are described in the server user guide on the Documentation CD.

Component and LED Identification

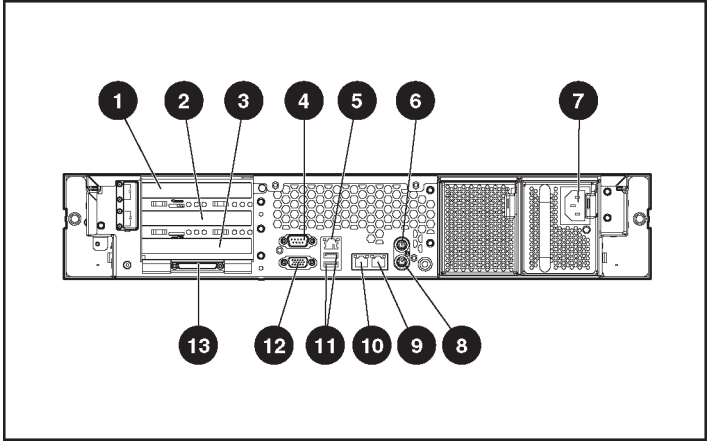
ProLiant DL380 Generation 3 Server



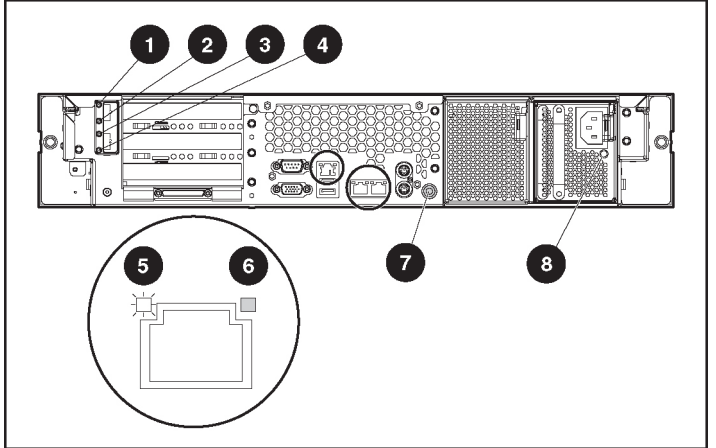
Front Panel Components	
Item	Description
1	Hard drive bays
2	Bay for tape drive or hard drive and tape drive blank
3	Diskette drive
4	CD-ROM drive



Front Panel LEDs and Buttons		
Item	Description	Status
1	Internal health LED	Green = Normal Amber = System degraded. Refer to system board LEDs to identify component in degraded state. Red = System critical. Refer to system board LEDs to identify component in critical state.
2	External health LED (power supply)	Green = Normal Amber = Power redundancy failure Red = Critical power supply failure
3	NIC 1 link/activity LED	Green = Network link
4	NIC 2 link/activity LED	Flashing = Network link and activity Off = No link to network. If power is off, view the rear panel RJ-45 LEDs for status.
5	UID LED button	Blue = Activated Flashing = System remotely managed Off = Deactivated
6	Power On/Standby button/system power LED	Green = System on Amber = System shut down, but power still applied. Off = Power cord not attached or power supply failure.

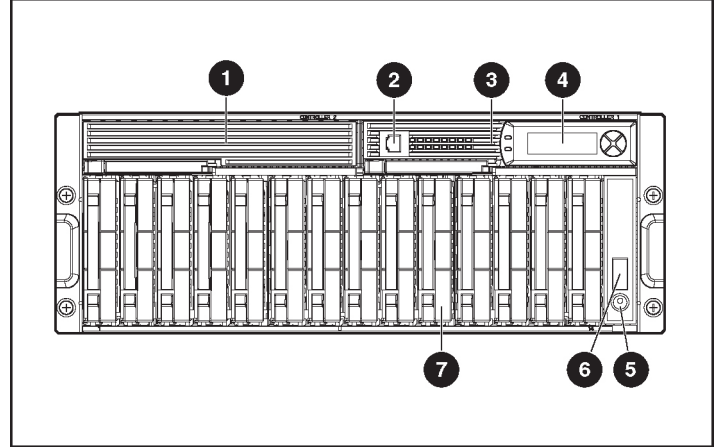


Rear Panel Components		
Item	Description	Connector Color
1	Hot-plug PCI-X expansion slot 3 (bus 6) 64-bit/100-MHz 3.3v	N/A
2	Hot-plug PCI-X expansion slot 2 (bus 6) 64-bit/100-MHz 3.3v	N/A
3	Non-hot-plug PCI-X expansion slot 1 (bus 3) 64-bit/133-MHz 3.3v	N/A
4	Serial connector	Teal
5	iLO connector	N/A
6	Mouse connector	Green
7	Power cord connector	N/A
8	Keyboard connector	Purple
9	NIC 1 connector	N/A
10	NIC 2 connector	N/A
11	USB connectors	Black
12	Video connector	Blue
13	VHDCI SCSI connector (port 1)	N/A

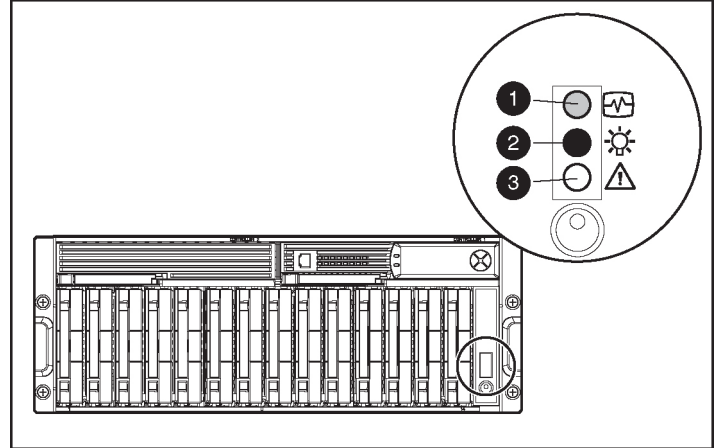


Rear Panel LEDs and Buttons			
Item	Description	LED Color	Status
1	PCI Hot Plug fault LED (slot 3)	Amber	On = Expansion board failed. Off = Normal
2	PCI Hot Plug power LED (slot 3)	Green	On = Power is applied to the slot. Flashing = Power is cycling. Off = Power is not applied to the slot.
3	PCI Hot Plug fault LED (slot 2)	Amber	On = Expansion board failed. Off = Normal
4	PCI Hot Plug power LED (slot 2)	Green	On = Power is applied to the slot. Flashing = Power is cycling. Off = Power is not applied to the slot.
5	RJ-45 link LED	Green	On = Linked to network Off = Not linked to network
6	RJ-45 activity LED	Green	On or flashing = Network activity Off = No network activity
7	UID LED button	Blue	On = Activated Flashing = System remotely managed. Off = Deactivated
8	Power supply LED	Green	On = Power turned on and power supply functioning properly. Off = One or more of the following conditions exists: <ul style="list-style-type: none"><li>AC power unavailable</li><li>Power supply failed</li><li>Power supply in standby mode</li><li>Power supply exceeded current limit</li></ul>

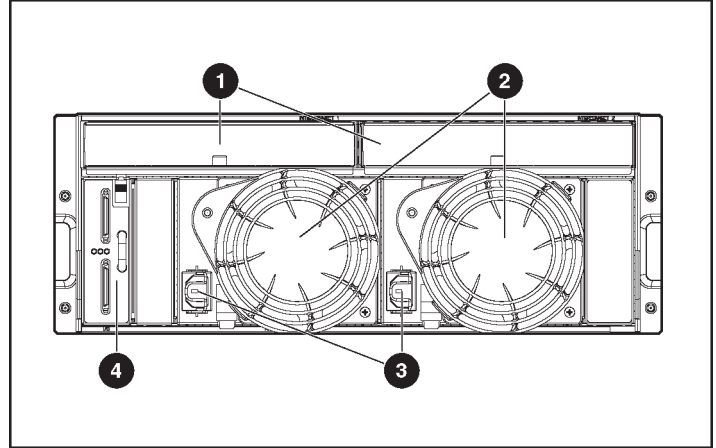
Smart Array Cluster Storage



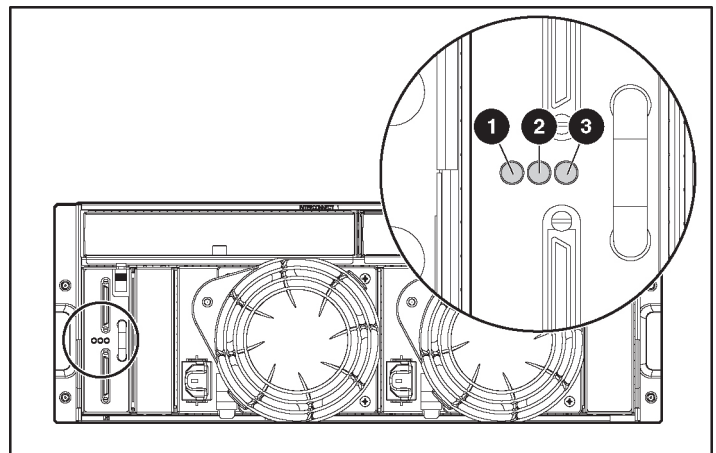
Front Panel Components	
Item	Description
1	Bezel blank (bay for optional redundant controller)
2	Service port (for HP service technicians only)
3	Hot-plug Smart Array Cluster Storage Controller
4	Controller display
5	Power On/Standby button
6	Enclosure LEDs
7	Hot-plug SCSI hard drives



Enclosure LEDs		
Item	LED Description	Status
1	Shared Storage Module	Flashing green= Module is operating normally. Green/Off = Module is not operating normally.
2	System power	Green = System power is on. Off = System is in standby mode or power is removed from the system.
3	Fault	Amber = Fault detected in a subsystem. Off = No faults detected.



Rear Panel Components	
Item	Description
1	Interconnect blanks (required for proper airflow)
2	Power supply/blower assembly
3	AC power connectors
4	2-Port Shared Storage Module

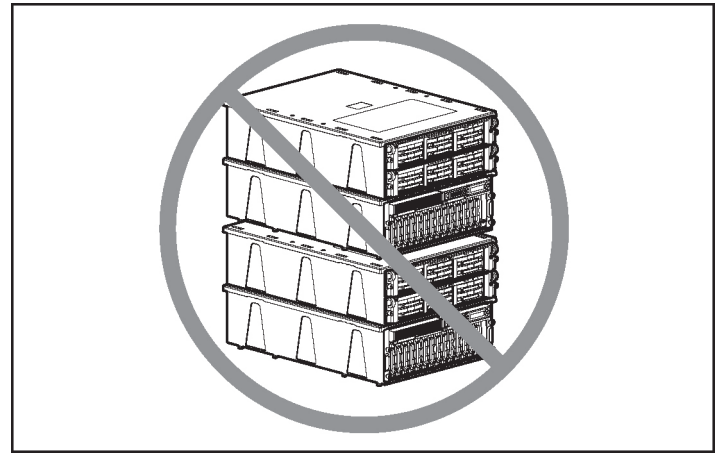


2-Port Shared Storage Module LEDs		
Item	LED Description	Status
1	Power	Green = Power on Off = Power off
2	SCSI host port A	Flashing green = On/Activity Off = Off
3	SCSI host port B	Flashing green = On/Activity Off = Off

Setup in the Configuration Fixture

Perform the following procedures for setup of the packaged cluster in the configuration fixture. This setup procedure assumes the cluster will be configured in the fixture and then transferred to another location.

**WARNING:** Do not stack clusters while in their configuration fixtures. The stack can become unstable and may tip over.

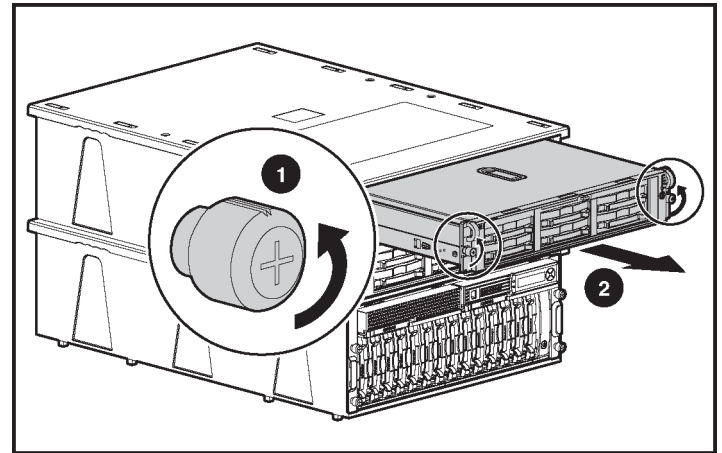


1 Installing Hardware Options

**NOTE:** Detailed option installation instructions are available with the options and are also in the server setup and installation guide, the server supplemental setup guide, and the storage system user guide on the Documentation CD.

- If internal server options (memory, processors, fans, and expansion boards) need to be installed:
  - Remove the servers from the server fixture.

**WARNING:** To reduce the risk of personal injury or damage to the equipment, the server must be completely removed from the server fixture to install the internal server options. At least two people are required to lift the servers during installation or removal.



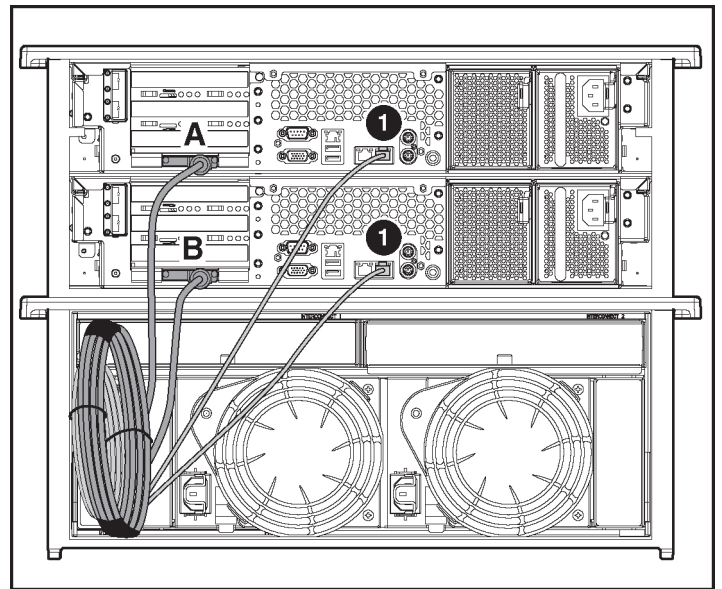
- Install the internal server options.
  - Replace the servers in the server fixture.
- Install the external server options.
  - Install the external storage system options.

2 Cabling the System in the Configuration Fixture

**NOTE:** The server fixture should be placed on top of the storage system fixture for ease in cabling the packaged cluster.

- Connect the VHDCI SCSI cables labeled **A** and **B** from the storage system to the servers.

**IMPORTANT:** Save the protective covers on the cable connectors for use when the packaged cluster is repacked.



- If you are configuring a Microsoft or Linux operating system, connect the Ethernet crossover cable between the servers. Use the same RJ-45 connector (1), NIC 1, on each server.
- Connect the peripheral devices such as the keyboard, mouse, and monitor. For information on peripheral device connections, refer to "Component and LED Identification" on this poster.

**WARNING:** To reduce the risk of electric shock, fire, or damage to the equipment, do not plug telephone or telecommunications connectors into RJ-45 connectors.

**IMPORTANT:** If the Remote Insight Lights-Out Edition II (RLOE II) board is installed in the server, be sure that you can attach the video cable to the video connector on the rear of the RLOE II board. The standard video connector on the server rear panel is not used when the RLOE II board is installed. For more information, refer to the *HP Remote Insight Lights-Out Edition II User Guide* on the Documentation CD.

**NOTE:** If you are using a KVM switchbox, refer to the switchbox documentation for detailed instructions.

- Connect the power cords to the servers and storage system.

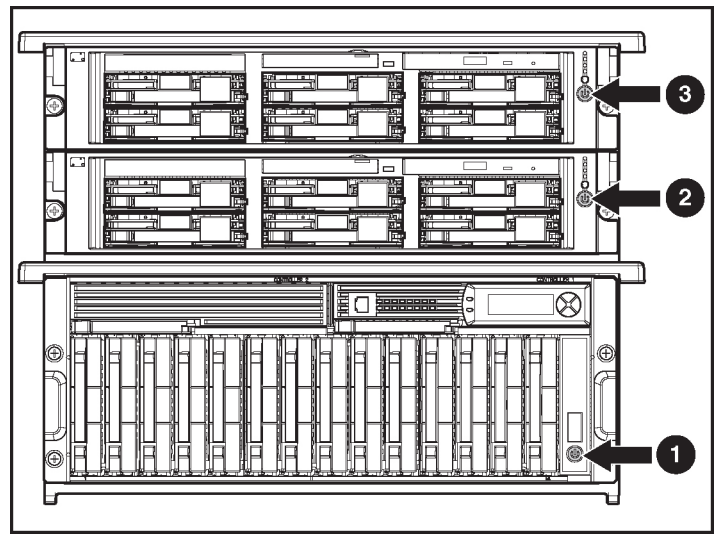
3 Powering On and Configuring the Packaged Cluster

- Power on the storage system (1) and wait for the controllers to initialize.

**IMPORTANT:** You must power on the Smart Array Cluster Storage system before powering on the servers. After powering on, wait until the storage system startup complete message displays. It might take up to two minutes for the system to completely power up.

- Power on one server, (2) or (3).

**IMPORTANT:** Do not use the Option ROM Configuration for Arrays (ORCA) utility to configure the Smart Array Cluster Storage. The Array Configuration Utility must be used.



While the server boots, the ROM-Based Setup Utility (RBSU) and the ORCA utility are automatically configured to prepare the server for the operating system installation. To configure these utilities manually:

- Press the **F8** key when prompted during the array controller initialization to configure the array controller using ORCA.
- Press the **F9** key when prompted during the boot process to change the server settings, such as the settings for language and operating system, using RBSU. The system is set up by default for the English language and a Microsoft Windows 2000 installation.

For more information on the automatic configuration, refer to the *HP ROM-Based Setup Utility User Guide* located on the Documentation CD.

- Insert the SmartStart CD into the CD-ROM drive and reboot the server. Follow the on-screen instructions to begin the operating system installation process.

For more information on installing the operating system, refer to the SmartStart installation poster included in the ProLiant Essentials Foundation Pack, the *HP ProLiant DL380 Generation 3 Packaged Cluster Setup and Installation Guide*, or the operating system documentation.

- Repeat steps 2 and 3 for the second server.
- Set up and verify the Smart Array Cluster Storage system and cluster operations.

**IMPORTANT:** For detailed information on completing the cluster setup, refer to the *HP ProLiant DL380 Generation 3 Packaged Cluster Setup and Installation Guide* located on the Documentation CD.

**NOTE:** Updated installation and cluster setup information is periodically released in HP white papers. Go to [www.hp.com/servers/proliant/highavailability](http://www.hp.com/servers/proliant/highavailability) for the most recent information.

4 Powering Down and Preparing for Transfer

- Shut down the operating system on each server and power off each server.
- Power off the storage system.
- Remove the power cords and return them to the original boxes.
- Disconnect the VHDCI SCSI cables and the Ethernet crossover cable from the servers.
- Disconnect all other cables from the servers.
- Replace the protective covers on the ends of the VHDCI SCSI cables.
- Secure the VHDCI SCSI cables and the Ethernet crossover cable for transfer.
- Repack the shipping components in their original configuration. Refer to the exploded view diagram and pictures on the packaged cluster poster as a guideline for repacking.

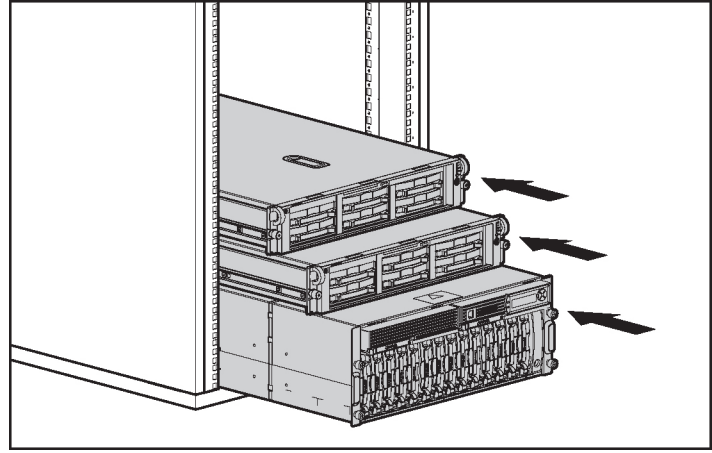
**Configuration is complete. The packaged cluster is ready for transfer.**

**See other side of poster for setup and installation in a rack.**



# Setup and Installation in a Rack

Perform the following procedures to set up the packaged cluster in a rack.



**WARNING:** To reduce the risk of personal injury or damage to the equipment, at least two people are required to lift the components during installation or removal.

## Rack Planning Resources

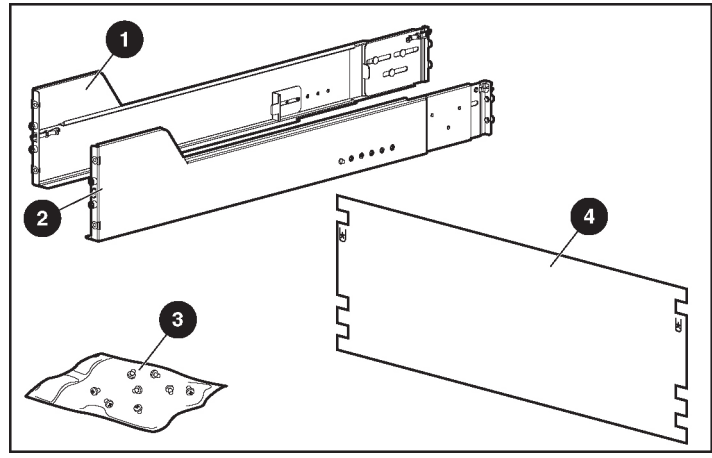
The rack resource kit ships with Compaq or HP 7000-, 9000-, and 10,000-series racks. For more information on the content of each resource, refer to the rack Documentation CD.

## 1 Installing the Storage System in the Rack

The rack-mounting hardware kit provides the required components for quick deployment in Compaq branded, HP branded, and most square-and round-hole third-party racks. The adjustable feature of the rack rails enables installation in racks with depths of 69.90 to 73.81 cm (27.52 to 29.06 inches).

If you are installing the Smart Array Cluster Storage system in an M-Series rack, contact an authorized reseller to obtain an M-Series Rack Rail option kit.

1. Locate the following materials necessary for installing the storage system.

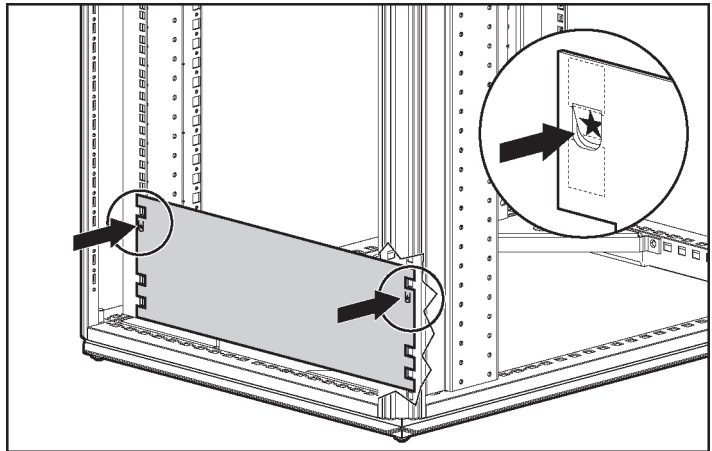


Item	Description
1	Rack rail (left)
2	Rack rail (right)
3	Pins for round-hole rack conversion
4	4U rack template

**IMPORTANT:** Install the storage system in the rack, leaving enough space above to install the servers. The following procedure details installation in a square-hole rack. For installation procedures concerning round-hole racks, refer to the *HP Smart Array Cluster Storage System User Guide* on the Documentation CD.

2. Use the instructions provided on the rack template to mark the rack for rail locations.

**WARNING:** The storage system weight, as assembled for shipping, exceeds 22.7 kg (50 lb). Install the storage system in the lowest available position in the rack.

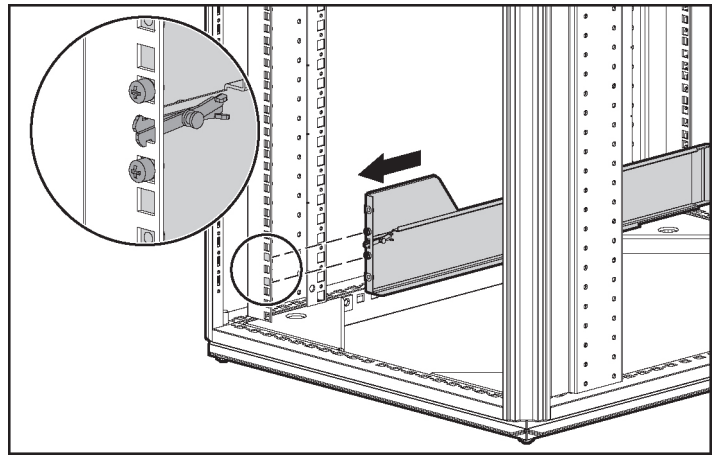


**IMPORTANT:** Unless you are converting the rails for use in round-hole racks, **do not** remove the pins from the ends of the rack rails. These load-bearing pins are designed to fit through the holes without being removed.

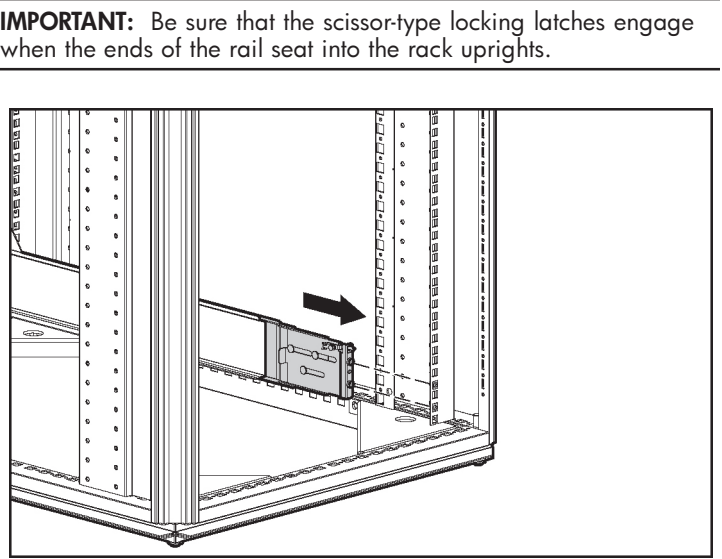
**NOTE:** Identify the left (L) and right (R) rack rails by the markings stamped into the sheet metal.

3. Insert the front end of the left rack rail into the inside front of the rack. Be sure that the pins extend through the holes marked during the rack template procedure.

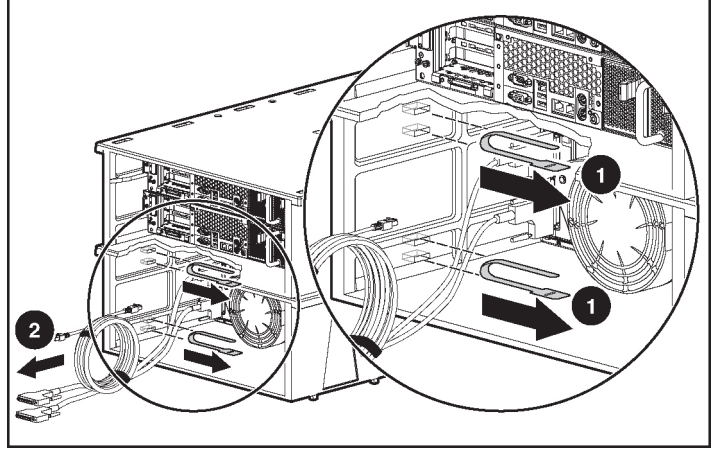
**IMPORTANT:** Be sure that the scissor-type locking latches engage when the ends of the rail seat into the rack uprights.



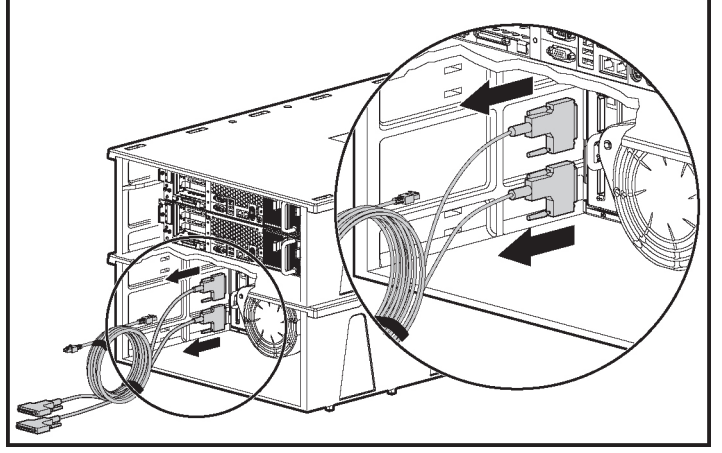
4. Slide the back end of the left rack rail into the inside rear of the rack. Be sure that the pins extend through the holes marked during the rack template procedure.



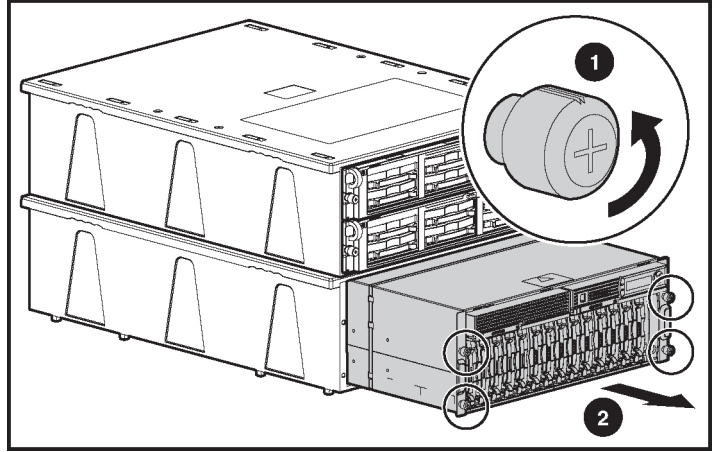
5. Repeat steps 3 and 4 for the right rack rail.
6. Remove the hook-and-loop fasteners (1) securing the VHDCI SCSI cables and the Ethernet crossover cable to the storage fixture.



7. Disconnect and remove the VHDCI SCSI cables from the storage system.



8. Loosen the thumbscrews that secure the storage system and slide the storage system from the storage system fixture.

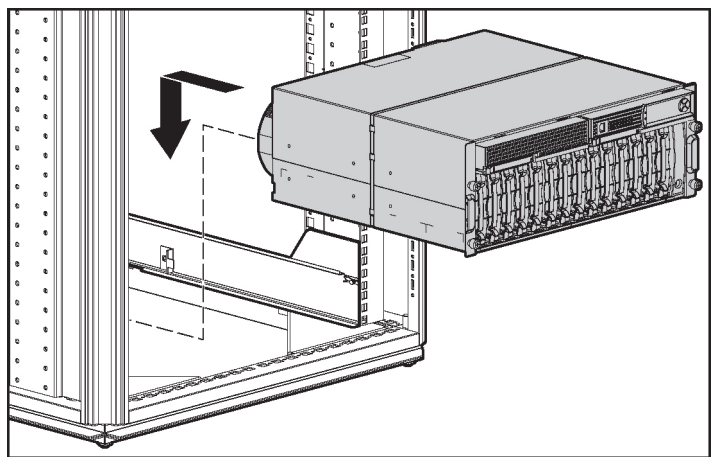


9. Align the storage system with the rails and slide it into the rack.

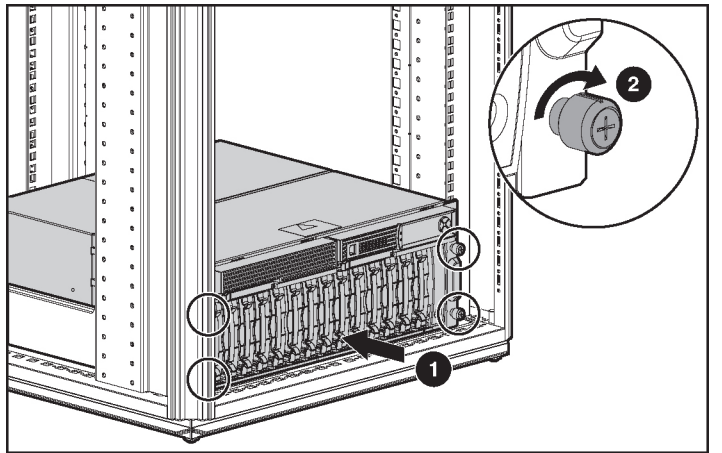
**WARNING:** The storage system weight, as assembled for shipping, exceeds 22.7 kg (50 lb). To reduce the risk of personal injury or damage to the equipment, at least two people are required to lift the storage system during removal or installation. Install the storage system in the lowest available position in the rack.

**WARNING:** Always use at least two people to lift a storage system into the rack. If the system is being loaded into the rack above chest level, a third person must assist with aligning the system with the rails while the other two people support the weight of the system.

**CAUTION:** To prevent storage system damage and to ease insertion, support the weight of the storage system and keep it level when sliding the storage system into the rack.

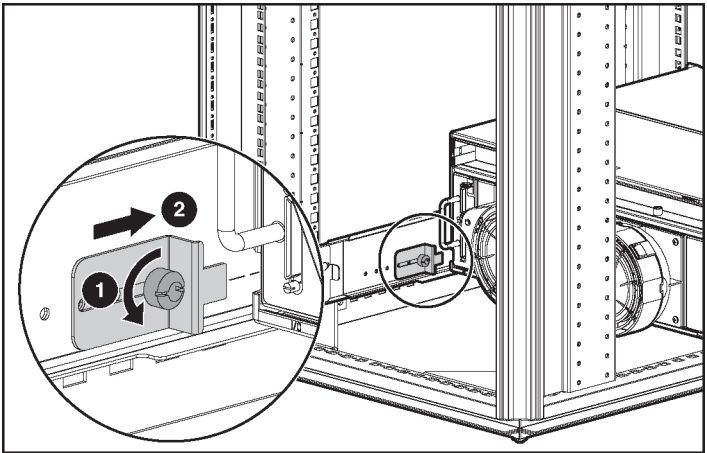


10. Secure the storage system to the rack.



**IMPORTANT:** Tightening of the shipping bracket is only necessary if the rack is to be shipped with the Smart Array Cluster Storage system installed.

11. Use the shipping bracket to secure the system in the rack for shipping:
  - a. Loosen the thumbscrew on the shipping bracket.
  - b. Slide the shipping bracket forward until it engages the storage system chassis.

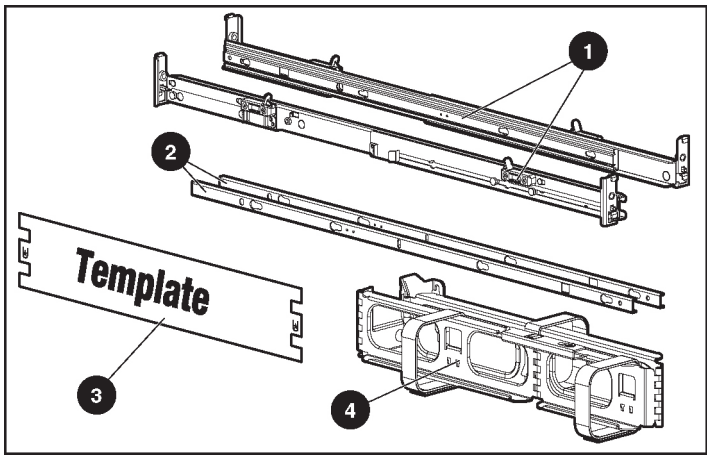


- c. Tighten the thumbscrew.

## 2 Installing the Servers in the Rack

Follow the steps in this section if you are installing the servers in a Compaq or HP 7000-, 9000-, or 10,000-series rack or a third-party rack with square holes. If you are installing the servers in an HP Rack System/E and HP Systems round-hole rack or a third-party rack with round holes, or if the supplied rails do not fit the square-hole rack you are using, order the third-party option kit for racks with round holes and use the installation instructions that ship with the option kit.

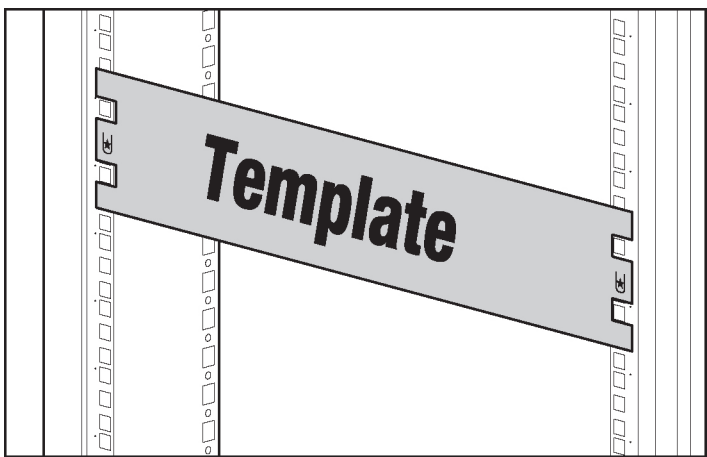
1. Locate the following materials necessary for installing the servers.



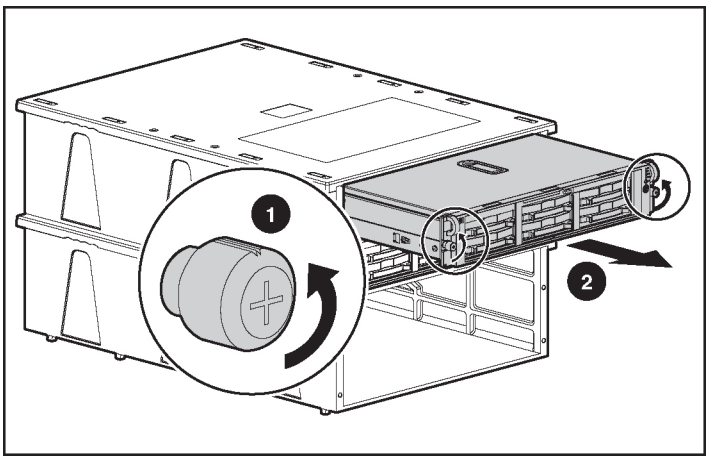
Item	Description
1	Left and right standard rack rail assemblies
2	Server rails
3	Rack template
4	Cable management arm

2. Mark the rack.

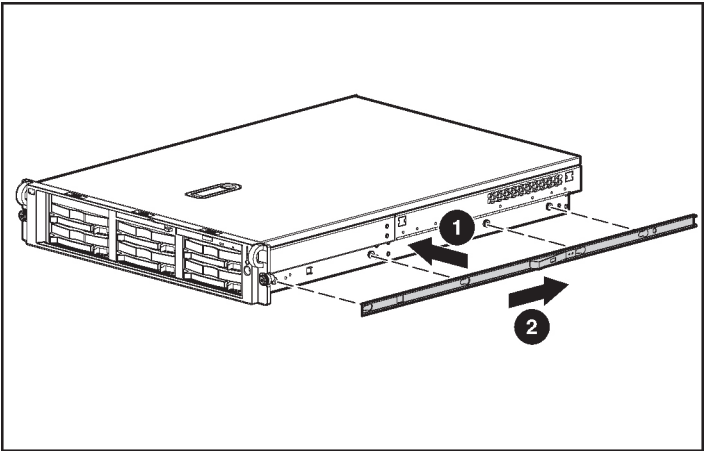
**CAUTION:** Always plan the rack installation so that the heaviest item is on the bottom of the rack. Install the heaviest item first, and continue to populate the rack from the bottom to the top.



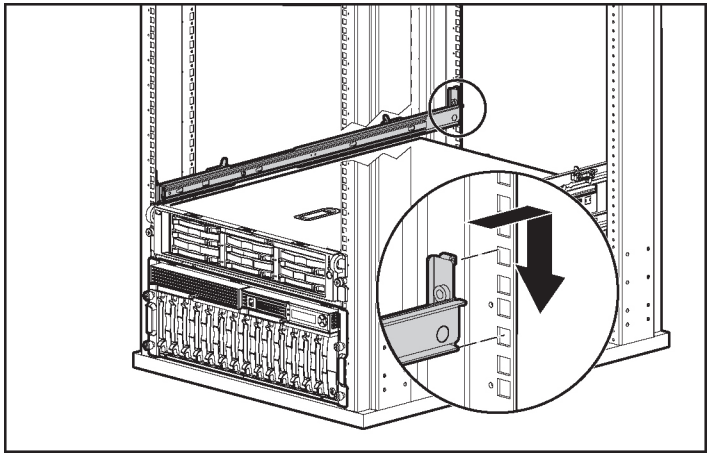
3. Loosen the thumbscrews that secure the servers and slide the servers from the server fixture.



4. Secure each server rail to the server.



5. Secure the left and right standard rack rails to the appropriate side of the rack.

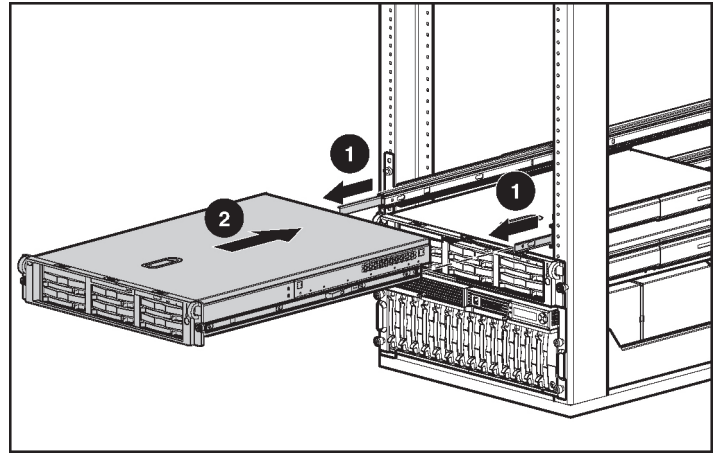


**NOTE:** Figures show one server already installed in the rack.

6. Extend the slides from the standard rack rails, and then slide the server rails into the slides.

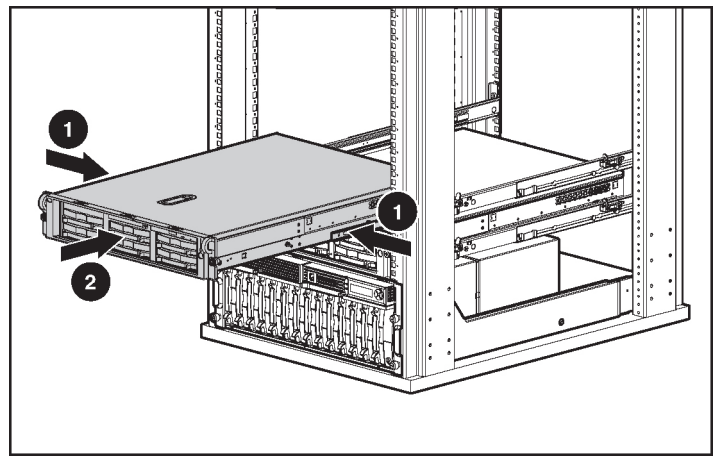
**WARNING:** To reduce the risk of personal injury or equipment damage, be sure that the rack is adequately stabilized before sliding the server rails into the rack rails.

**CAUTION:** Be sure to keep the server parallel to the floor when sliding the server rails into the rack rails. Tilting the server up or down could result in damage to the rails.

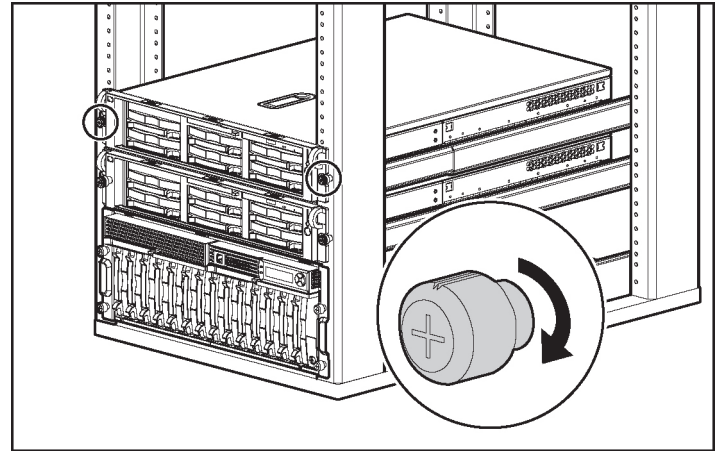


7. Press the rail-release latches and slide the server into the rack.

**WARNING:** To reduce the risk of personal injury, be careful when pressing the server rail release latches and sliding the server into the rack. The sliding rails could pinch your fingers.



8. Secure the server to the rack.



9. Repeat steps 1 through 8 for the second server.

## 3 Installing Hardware Options

**IMPORTANT:** If your system was previously configured, skip to "Cabling the System in a Rack."

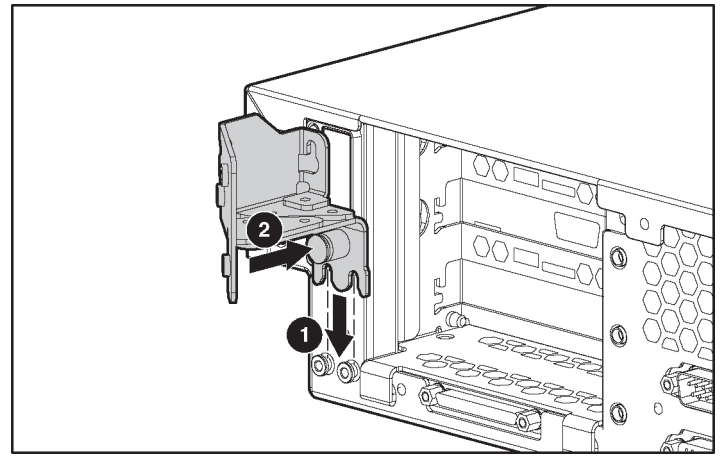
**NOTE:** Detailed option installation instructions are available with the options and are also in the server setup and installation guide, the server supplemental setup guide, and the storage system user guide on the Documentation CD.

1. Install the server options.
2. Install the storage system options.

## 4 Cabling the System in a Rack

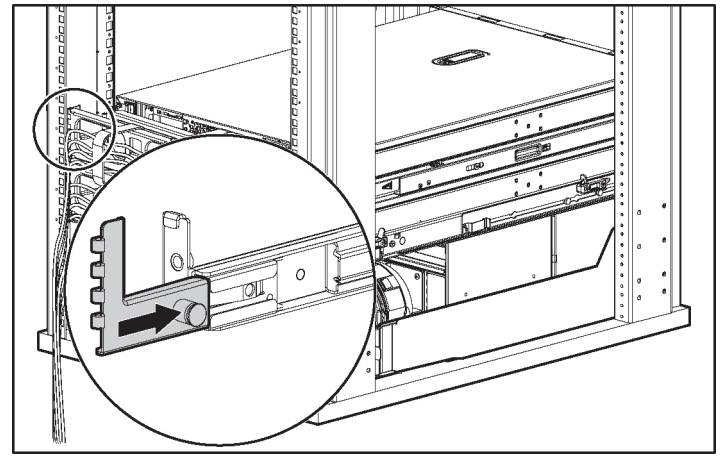
**NOTE:** It is recommended, for ease of cabling, to install one cable management arm on a server and route the cables before installing the second cable management arm.

1. Secure the cable management arm bracket to the server.

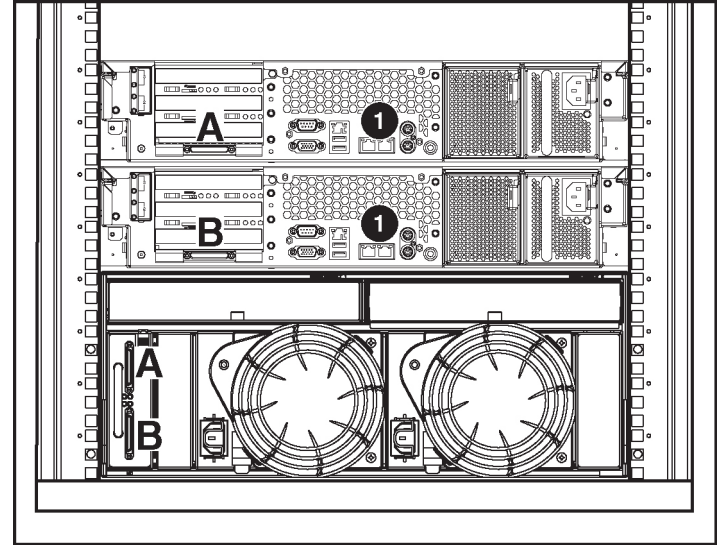


**NOTE:** The cable management arm is removed for clarity.

2. Secure the cable management bracket to the rail.



3. Connect the VHDCI SCSI cables labeled **A** and **B** from the storage system to the servers.



4. If you are configuring a Microsoft or Linux operating system, connect the Ethernet crossover cable between the servers. Use the same RJ-45 connector (1), NIC 1, on each server.
5. Connect peripheral devices such as the keyboard, mouse, and monitor. For information on peripheral device connections, refer to "Component and LED Identification" on this poster.

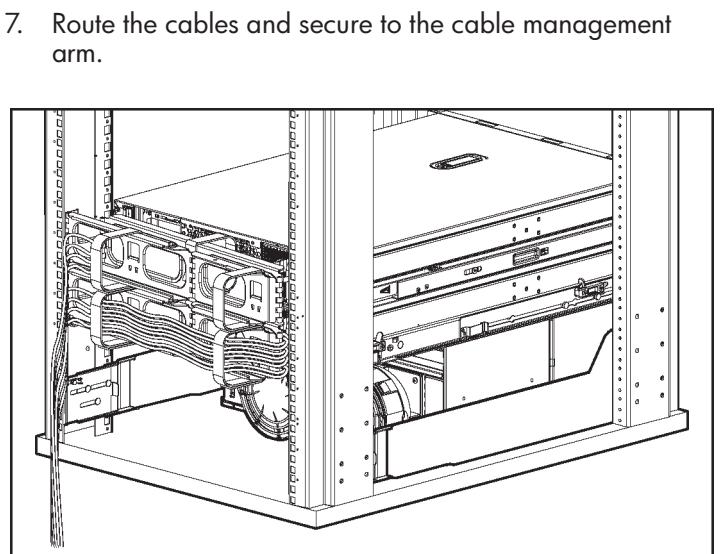
**WARNING:** To reduce the risk of electric shock, fire, or damage to the equipment, do not plug telephone or telecommunications connectors into RJ-45 connectors.

**IMPORTANT:** If the RILOE II board is installed in the server, be sure that you can attach the video cable to the video connector on the rear of the RILOE II board. The standard video connector on the server rear panel is not used when the RILOE II board is installed. For more information, refer to the *HP Remote Insight Lights-Out Edition II User Guide* on the Documentation CD.

**NOTE:** If you are using a KVM switchbox, refer to the switchbox documentation for detailed instructions.

6. Connect the power cords to the servers and storage system.

**IMPORTANT:** Do not power on the servers or the storage system until instructed to power on.



8. Connect the power cords to the AC power source.

**WARNING:** To reduce the risk of electric shock or damage to the equipment:

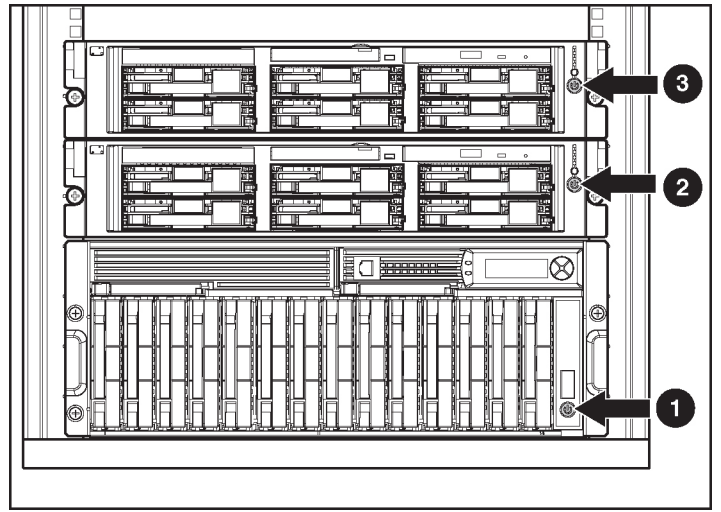
- Do not disable the power cord grounding plug. The grounding plug is an important safety feature.
- Plug the power cord into a grounded (earthed) electric outlet that is easily accessible at all times.
- Unplug the power cord from the power supply to disconnect power to the equipment.
- Do not route the power cord where it can be walked on or pinched by items placed against it. Pay particular attention to the plug, electric outlet, and the point where the cord extends from the server.

## 5 Powering On and Configuring the Packaged Cluster in a Rack

1. Power on the storage system (1) and wait for the controllers to initialize.

**IMPORTANT:** You must power on the Smart Array Cluster Storage system before powering on the servers. After powering on, wait until the storage system startup complete message displays. It might take up to two minutes for the system to completely power up.

2. Power on one server, (2) or (3).



**IMPORTANT:** Do not use the Option ROM Configuration for Arrays (ORCA) utility to configure the Smart Array Cluster Storage.

**IMPORTANT:** If your system was previously configured, power on the second server. The installation process is complete.

While the server boots, the ROM-Based Setup Utility (RBSU) and the ORCA utility are automatically configured to prepare the server for the operating system installation. To configure these utilities manually:

- Press the **F8** key when prompted during the array controller initialization to configure the array controller using ORCA.
- Press the **F9** key when prompted during the boot process to change the server settings, such as the settings for language and operating system, using RBSU. The system is set up by default for the English language and a Microsoft Windows 2000 installation.

For more information on the automatic configuration, refer to the *HP ROM-Based Setup Utility User Guide* located on the Documentation CD.

3. Insert the SmartStart CD into the CD-ROM drive and reboot the server. Follow the on-screen instructions to begin the operating system installation process.

For more information on installing the operating system, refer to the SmartStart installation poster included in the ProLiant Essentials Foundation Pack, the *HP ProLiant DL380 Generation 3 Packaged Cluster Setup and Installation Guide*, or the operating system documentation.

4. Repeat steps 2 and 3 for the second server.
5. Set up and verify the Smart Array Cluster Storage system and cluster operations.

**IMPORTANT:** For detailed information on completing the cluster setup, refer to the *HP ProLiant DL380 Generation 3 Packaged Cluster Setup and Installation Guide* located on the Documentation CD.

**NOTE:** Updated installation and cluster setup information is periodically released in HP white papers. Go to [www.hp.com/servers/proliant/highavailability](http://www.hp.com/servers/proliant/highavailability) for the most recent information.

The installation is complete.